



DISPLAYS FAQ

Q Your display reviews often mention contrast ratio. What is it, and what ratio should I look for?

A The contrast ratio is the ratio of light intensity of the brightest possible colour to the darkest possible colour that a display is capable of producing. It's a measure of how bright a white a display can produce and how dark a black it can produce. So the higher the contrast ratio the better a display, as it can produce darker blacks and whiter whites.

The contrast ratio affects image quality, as displays with a high ratio can cope better with high-contrast scenes. You also get better colour reproduction as displays with poor contrast ratios have desaturated colour. LCDs range from 500:1 to 700:1, but projectors have higher ratios. DLP projectors carry 2,000:1 contrast ratios, as a pixel can be turned off, creating a true black.

However, contrast ratio is measured from the viewpoint of a dark room. Using a display in a room with a light source reduces the contrast ratio; the brighter the light, the worse it gets.

Choose a monitor with the highest contrast ratio you can. Viewing angles and response times are important too, though, so always read our reviews before making a final choice.

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REVIEW 19" WIDESCREEN MONITOR

VIEWSONIC VA1912w



RATING ★★★★★

PRICE £220 inc VAT

SUPPLIER www.morecomputers.co.uk

DETAILS www.viewsonic.co.uk

While widescreen monitors are better for entertainment, particularly watching movies, the large screen size puts a lot of people off using them on a desk. ViewSonic's VA1912w, with its 19" screen, is just big enough to offer a large viewing space, but small enough to fit on your desk without dominating it.

It comes with two stereo speakers, which sound good enough for standard Windows noises, but should be replaced by a decent set by anyone who wants to listen to music or play games.

There are analogue and digital inputs, so you can use this monitor with any PC, although you'll get the best picture with DVI. Picture quality is pretty good and standard Windows applications look vibrant, with sharp text.

Viewing angles aren't the best, though. We found that we had to be directly in front of the monitor, otherwise the image lost brightness and colour accuracy. The VA1912w also struggled with our greyscale test and displayed a lot of banding in the darker shades, but the lighter shades were displayed perfectly. Our colour wheel test produced a far more satisfactory image, although there was poor transition from light blue to dark blue. For normal use, though, you'd never notice these slight anomalies and the Windows desktop and games we tested looked fine.



The response rate of 8ms is very good and means that you won't see any ghosting when viewing fast-moving scenes, such as games. The best thing about the VA1912w is its massive 1,440x900 resolution. It means that you have enough desktop space to use two applications next to each other, so it's great for work as well as entertainment.

While this monitor may not have the best image quality that we've ever seen, the price alone means a lot can be forgiven. If you're looking for a cheap, large monitor then the VA1912w is an excellent choice.

David Ludlow



Cheap; analogue and digital inputs



Viewing angles could be better; banding in greyscale test

SPECIFICATIONS 19" widescreen LCD, 1,440x900 resolution, 8ms response time, 500:1 contrast ratio, DVI and D-sub inputs.
Part code VA1912w

HOTLIST 26" LCD TV

SAMSUNG LE26R51BD



RATING ★★★★★

PRICE £650 inc VAT

SUPPLIER www.dixons.co.uk

DETAILS www.samsung.co.uk

PRICE
CUT

Samsung's 26" HD TV possesses stunning good looks and oozes quality. It receives digital and analogue TV stations, so there's no need for a Freeview box. Video inputs look stunning through this set, giving sharp and vibrant images. This TV has support for HD video, making it remarkable value.



SPECIFICATIONS 26" LCD TV, 1,360x768 resolution, HD Ready, one HDMI, one VGA, two SCART, one component, one S-video, headphone. Part code LE26R51BD

HOTLIST 20.1" LCD

AOC LM2028



RATING ★★★★★

PRICE £390 inc VAT

SUPPLIER www.pcnextday.co.uk

DETAILS www.aocmonitor.com

AOC's LM2028 is cheaper than many 19" screens, but its 20.1" panel doesn't just give more display space, it provides a higher resolution of 1,600x1,200, too. It also produces a decent image, although whites aren't as true as we'd like. Unless you need perfect colour accuracy, though, it's a bargain.



SPECIFICATIONS 1,600x1,200 native resolution, D-sub, DVI. Part code TFT2090PS+

HOTLIST HOME CINEMA PROJECTOR

EPSON EMP-TW600



RATING ★★★★★

PRICE £1,293 inc VAT

SUPPLIER www.247av.com

DETAILS www.epson.co.uk

With three LCDs and a new iris capable of producing a 5,000:1 contrast ratio, Epson's EMP-600W is one of the best-quality projectors we've seen. It's HD compatible and has all the inputs you could ever want. Its menu system is a little confusing, but it's still an excellent choice.



SPECIFICATIONS Three-LCD projector, 60-300" screen size, 1,280x720 resolution, HDMI, SCART, S-video, D-sub, component and composite inputs, 1,700 hours lamp life (3,000 hours in low lamp mode), 5,000:1 contrast ratio. Part code EMP-600W


REVIEW LCD PROJECTOR

PANASONIC PT-AE900


RATING ★★★★★

PRICE £1,046 inc VAT

SUPPLIER www.pixmania.co.uk
DETAILS www.panasonic.co.uk

This year promises to be a big one for High Definition (HD) in the UK. The Xbox 360's launch has given us the first HD source, while Sony's PS3 and Sky's HD service due later in the year will cement the demand for this technology.

While you can buy an LCD TV to do the job, a projector gives you a far bigger picture on which to enjoy HD images. Panasonic's PT-AE900 may be just what you need to appreciate all this content in your own home. It uses three LCD pictures and has a native resolution of 1,280x720, so it should be used with 720p HD content.

It produces 1,100 lumens brightness, so it's best used in a slightly darkened room. At this brightness the bulb lasts for 3,000 hours. If you can darken the room completely, you can put the projector into eco mode and increase bulb life, but Panasonic hasn't released exact figures.

As with Epson's EMP-TW600 (see Hotlist, below left), the PT-AE900 uses a dynamic iris that constantly adjusts the light emitted by the projector and gives an impressive 5,500:1 contrast ratio (see the FAQ opposite).

Image quality is stunning and on a par with the EMP-TW600. We mainly tested using the Xbox 360, which produced vibrant, detailed images. It was equally capable with RGB SCART from our DVD player, de-interlacing and upscaling our

Spider-Man 2 DVD without any notable problems. Panasonic has used its Smooth Screen technology here, so even up close you won't be able to see the pixel structure from the LCDs.

The device itself is a boxy but compact bookshelf-style projector. Hot air from the bulb is vented from the front to prevent it overheating when surrounded by other objects. There are the expected mass of inputs on the rear, including component, SCART and HDMI. A wide-angle zoom lens creates a big image even with a short throw distance. There's also a lens shift system, so you can move the projected image around without having to physically move the projector or distort the image using digital correction methods, which is useful for temporary installations.

The bundled remote control is worthy of more than the usual cursory note, being complex enough to warrant its own manual. It has a small LCD and can learn commands from your other remotes,

either directly or through input codes. It works well and means you'll need only one remote for all your electronic devices.

It's hard to choose between the PT-AE900 and Epson's EMP-TW600. The EMP-TW600 has a brighter bulb, but we found it harder to set up. We've compared the two repeatedly and it is hard to divide them in terms of picture quality. However, the PT-AE900 is easier to use and can be bought for a little less, so it gets our recommendation.

Seth Barton

✓ **Great remote control; excellent picture quality**

✗ **Boring appearance**

SPECIFICATIONS Three-LCD projector, 40-300" screen, 1,280x720 resolution, HDMI, SCART, S-video, D-sub, component and composite inputs, 3,000 hours lamp life, 5,500:1 contrast ratio. **Part code** PTAE900E


HOTLIST 17" LCD

ACER AL1751


RATING ★★★★★

PRICE £188 inc VAT

SUPPLIER <http://uk.insight.com>
DETAILS www.acer.co.uk

Its reflective coating makes the AL1751 display dark, rich blacks and vibrant colours. It passed all our image tests with ease, and is one of the best-quality monitors we've reviewed. It has DVI and D-sub inputs, and copes with both well. With its 8ms response time it's ideal for gamers, but at this price it's a great buy for anyone.



SPECIFICATIONS 17" LCD, 1,280x1,024 resolution, 8ms response time, 500:1 contrast ratio, stereo speakers, DVI and D-sub inputs. **Part code** ETL4008.011

HOTLIST 19" LCD

BELINEA 10 19 25

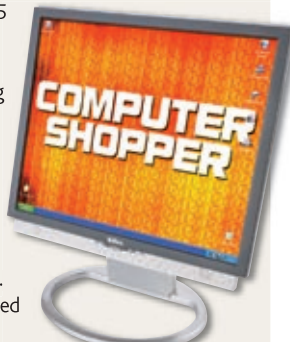

RATING ★★★★★

PRICE £200 inc VAT

SUPPLIER www.247av.com
DETAILS www.belinea.co.uk

Belinea's 10 19 25 might be fairly ugly, but it has several redeeming features including excellent image quality. Colours are balanced and clean with an even backlight. Detail is maintained in dark areas, although skin tones lack warmth.

If you want a decent 19" LCD that doesn't cost a fortune, this is an excellent buy.



SPECIFICATIONS 1,280x1,024 native resolution, D-sub, DVI, speakers, three-port USB. **Part code** 10 19 25

HOTLIST 32" LCD TV

SAMSUNG LE32R41BD


RATING ★★★★★

PRICE £782 inc VAT

SUPPLIER www.empiredirect.co.uk
DETAILS www.samsung.co.uk

PRICE CUT

The LE32E41BD is a gorgeous TV with image quality to match. It supports analogue and digital TV, and is incredibly easy to set up. It has a large range of inputs, so you can connect any device to it. Picture quality was excellent across the board, with HD video looking particularly good. It's great value for the size of the screen.



SPECIFICATIONS 32" LCD TV, 1,360x768 resolution, HD Ready, one HDMI, one VGA, two SCART, one component, one S-video, one composite headphone. **Part code** LE32E41BD



REVIEW PORTABLE PROJECTOR

NEC
MultiSync LT25

RATING ★★★★★

PRICE £899 inc VAT

SUPPLIER www.macwarehouse.co.ukDETAILS www.nec-display-solutions.com

NEC's MultiSync LT25 is a portable projector designed to be carried around. It is not as small as the latest pocket projectors, such as Toshiba's TDP-P8 (reviewed in *What's New, Shopper* March 2006), but it weighs just 2kg and comes with a carry case so it's almost as easy to transport.

One of the problems with changing meeting rooms constantly is getting the projector set up; NEC has tried to make it as painless as possible. The LT25 has automatic keystone correction and auto focus. Just place the projector on a desk and you'll get a good image. There's also an option to select the background colour, which is useful for compensating for colour variances caused by projecting on to walls. Finally, the quick turn-off feature saves time when you're packing up. In our tests, the LT25 took just 16 seconds to power off, which is quicker than most notebooks.

There's a PC control port, so you can control the projector via a PC and use the remote control for mouse clicks, but no cable is provided. It's also a serial connection, so you need a PC or notebook with a serial port on it. A USB connection would be better. There are only D-sub, composite and S-video inputs. Picture quality over the D-sub connection was good, but we had to adjust the clock and phase settings manually to get the best picture.

The LT25 uses a 0.7" DLP chip that provides a native resolution of 1,024x768. Strangely, it has a contrast ratio of only 1,500:1, while most DLP projectors have at least 2,000:1. This could be the cause of the problems we saw in high-contrast regions of the picture. Otherwise, performance was fine, with excellent colour reproduction, particularly in our colour wheel test. There was little evidence of the rainbow effect, except in high-contrast screens.

NEC's LT25 has a great range of quick setup features, but a USB PC connection and better text quality would make it a more appealing prospect.

David Ludlow

✓ Quick to power down; auto focus

✗ Serial PC connection; some problems displaying high-contrast regions

SPECIFICATIONS DLP projector, 1,024x768 resolution, 30-300" image size, S-video, D-sub and composite inputs, 2,200 ANSI lumens, 2,000 hours lamp life (2,500 in ECO mode), 1,500:1 contrast ratio, auto focus, automatic keystone correction. **Part code** NECPR054

REVIEW COLOUR CALIBRATION

DATACOLOR
SpyderTV

RATING ★★★★★

PRICE £200 inc VAT

SUPPLIER Colour Confidence 08000 735845

DETAILS www.colourconfidence.com

Press the menu button on your TV and you'll see how many different picture adjustments there are. While most of us can get a passable picture by fiddling with these settings, a properly calibrated picture requires another tool.

Datacolor's SpyderTV does the job. The package contains a USB colorimeter, which is a scanner that attaches to your TV and reads the colour output digitally. The results are fed back into your PC, where the calibration software reads the value. The final part of the package is the test images on DVD, which you play through your DVD player.

The system works quite well. Attach the colorimeter to the TV using the provided suction cup and follow the software. You must enter your TV's current settings, including the brightness and contrast levels, colour temperature and colour level. You also need to enter the minimum and maximum values for each setting. This is fine if your TV uses a numerical scheme, but those with a slide bar should count the number of steps in the scale, otherwise it's hard to follow the wizard.

The software then runs the wizard, which goes through the test patterns getting you to adjust the picture settings, all the while taking readings. The software tells you which setting is best for your TV. You can check the difference after adjustment by loading the additional test images and adjusting image settings manually between their original and new settings.

For our TV it took around 25 minutes to run through the display settings. It made quite a big difference, neatly balancing the shadows and highlights, while making colours more vibrant.

The problem with this package is that it's very expensive. It's unlikely that once you've adjusted your TV the SpyderTV will get a lot of use. Unless you must have the best quality from your TV, manual adjustments using the test patterns on a lot of DVDs will be fine for most.

David Ludlow

✓ Improves image quality; wizard is easy to follow

✗ Expensive

SPECIFICATIONS USB colorimeter, test patterns on DVD. **Part code** DATA501

REVIEW HOME ENTERTAINMENT PROJECTOR

OPTOMA
MovieTime

RATING ★★★★★

PRICE £720 inc VAT

SUPPLIER www.europc.comDETAILS www.optoma.com

It might look like a robot vacuum cleaner, but Optoma's MovieTime is all you need to watch movies. The white casing contains a DVD player, a DLP projector and speakers.

It's not without its problems, though. First, the projector is designed to be placed on a table and project upwards towards a screen. If you place it any higher, it just projects on to the ceiling and the screen controls don't provide enough adjustment to move it down to a wall.

Next, the DLP projector has a resolution of only 854x480 (NTSC). All other inputs, including PAL (1,024x576), are downsampled to fit the projector's resolution. For PAL DVDs you can't really tell the difference, but using the D-sub input with a PC produces very poor results, so there's little point in using the projector for this purpose. Optoma says the MovieTime is HD compatible, but as HD images are downsampled to match the projector's resolution there's very little point.

Video quality when watching DVDs is pretty good, as the image doesn't have to be scaled. Colours are accurate and the display is sharp, but nothing to get excited about. Unfortunately, the DVD player is difficult to use because of the remote's odd layout. It also doesn't work quite as you'd expect. Skipping a chapter forwards doesn't display the chapter number onscreen, and skipping back a chapter doesn't take you to the start of the current one but jumps you back to the start of the previous chapter.

The two 5W speakers are incredibly bad and have particularly poor bass reproduction. They also seem to amplify annoying high-end noises, such as the motorbike at the start of *Spider-Man 2*.

What seems a fairly good idea is let down by poor implementation. With such a low resolution, the MovieTime is no good for other inputs and we'd suggest steering clear of it.

David Ludlow

✓ Quiet

✗ Low resolution; poor DVD operation

SPECIFICATIONS DLP projector, 854x480 resolution, 47-358" image size, S-video, D-sub and composite inputs, SCART adaptor, built-in DVD player, 1,000 ANSI lumens, 2,000 hours lamp life (3,000 in ECO mode), 2,000:1 contrast ratio. **Part code** DV10